

## WHAT IS CLAIMED IS:

1. A transmission line type noise filter connectable between a direct current power supply (70) and an electrical load component (80) for passing a  
 5 coming DC current while attenuating a coming AC current, said transmission line type noise filter comprising:

a first conductor (11) formed in a plate shape and having a length (L) along a first direction (X) parallel to a transmission line, a width (W) along a second direction (Y) perpendicular to said first direction (X), and a thickness (t)  
 10 along a third direction (Z) perpendicular to said first and said second directions (X, Y);

a dielectric layer (30) formed on said first conductor (11);

a second conductor (20) formed on said dielectric (30);

a first anode (12) connected to one end portion of said first conductor  
 15 (11) in said first direction (X) for connecting said first conductor (11) to the direct current power supply (70); and

a second anode (13) connected to the other end portion of said first conductor (11) in said first direction (X) for connecting said first conductor (11) to the electrical load component (80);

20 said second conductor (20) serving as a cathode connectable to a standard potential;

said first and said second conductors (11, 20) and said dielectric layer (30) providing a capacitance forming portion (50); and

said thickness (t) of said first conductor (11) being selected to  
 25 substantially restrict temperature elevation of said first conductor (11) caused by DC current flowing in said first conductor (11).

2. The transmission line type noise filter according to claim 1, wherein said first conductor (11) is made essentially of valve-operational metal and said

dielectric (30) is made of an oxidized film of said valve-operational metal.

3. The transmission line type noise filter according to claim 2, wherein said valve-operational metal is aluminum, and wherein said thickness (t) of said first conductor (11) is 2.0 mm or less.

5           4. The transmission line type noise filter according to claim 2, wherein said valve-operational metal is tantalum, and wherein said thickness (t) of said first conductor (11) is 1.5 mm or less.

          5. The transmission line type noise filter according to claim 2, wherein said valve-operational metal is niobium, and wherein said thickness (t) of said  
10 first conductor (11) 1.0 mm or less.

          6. The transmission line type noise filter according to claim 1, wherein said first conductor (11) and said first and said second anode (12, 13) are integrally formed in a form of a metal sheet.